

REMARKS

In the June 14, 2004 Office Action, the Examiner:

- Rejected claim 18 under 35 U.S.C. 112, second paragraph, as being indefinite; and
- Rejected claim 18 under 35 U.S.C. 103(a) as unpatentable over Dickensheets *et al.* ("Dickensheets", U.S. Pat. No. 5,742,419).

Claim Rejections - 35 U.S.C. § 112

Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner states that claim 18 "is narrative in form and indefinite in that there is no optical interconnection between the first micromechanical convex mirror and the second micromechanical concave mirror listed in the claim. The structure must be organized and correlated in such a manner as to present a complete operative device."

Claim 18 has been amended to further clarify that the second micromechanical mirror faces the first micromechanical mirror. Accordingly, the revised claim now recites the relationship between the first micromechanical mirror and the second micromechanical mirror. In light of the above, it is respectfully submitted that the Examiner's 35 U.S.C. 112 rejections have been addressed.

Claim Rejections - 35 U.S.C. § 103

The Examiner has rejected claim 18 under 35 U.S.C. 103(a) as unpatentable over *Dickensheets*. The Examiner states that:

Dickensheets et al discloses a micromechanical scanning device having a first micromechanical mirror (17) having a first radius of curvature value (infinity); a first micromechanical drive mechanism (including conductive regions 31 and 32, and conductive film on the surface of the mirror 17); a second micromechanical mirror (18) having a second radius of curvature value (infinity); and a second micromechanical drive mechanism (including conductive regions 33 and 34, and conductive film on the surface of the mirror 18). See Figs. 2 and 3, and column 3, lines 59-62.

The difference between the claimed invention and the applied prior art is that while the first mirror and the second mirror in the claimed invention are convex and concave, respectively, the mirrors in the applied prior art are flat.

Because the claim does not particularly specify the radius of curvature values of the convex and concave mirrors, it is the examiner position that the absolute radius of curvature values of the convex and concave mirrors are equal; and because the absolute radius of curvature values of the convex and concave mirrors are equal, the optical power of the combined convex mirror and concave mirror is zero which is the same as the optical power of the combined mirrors (17 and 18) of the applied prior art. Therefore, the use of the combination of the convex and the concave mirrors of the same absolute radius of curvature value instead of flat mirrors is considered an alternative to provide a zero optical power. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the flat mirrors in the applied prior art with a convex and concave mirrors of the same absolute radius of curvature value as an alternative for the common feature, i.e. obtaining a zero optical power. (Emphasis added).

In other words, the Examiner believes that because the combined effect of the concave and convex mirrors is to cancel any curvature effect, the invention is obvious over *Dickensheets*, which discloses two flat mirrors that have no curvature.

First, to establish a prima facie case of obviousness the prior art reference (or references when combined) must teach or suggest all the claim limitations.¹ *Dickensheets* only discloses two flat mirrors. Conversely, independent claim 18 requires concave and convex mirrors, i.e., non optically flat mirrors. *Dickensheets* alone does not disclose each and every limitation of independent claim 1. Moreover, the Examiner has not provided any evidence that it is well known in the micromechanical optical arts to utilize convex and concave mirrors of the same absolute radius of curvature value to negate curvature effects. It is well established law that taking official notice unsupported by documentary evidence should only be taken by the Examiner where the facts asserted to be well-known, or to be common knowledge in the art, are capable of instant and unquestionable demonstration as being well-known.² Accordingly, the Examiner is respectfully requested to support his findings with adequate evidence.³

¹ *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

² *See In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970).

³ *See* MPEP 2144.03.

Second, to establish a prima facie case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.⁴ The level of skill in the art cannot be relied upon to provide the suggestion to combine references.⁵ The Examiner argues that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify *Dickensheets* by replacing the flat mirrors with a convex and concave mirrors of the same absolute radius of curvature value. However, *Dickensheets* only discloses flat mirrors, i.e., mirrors having no curvature, and, accordingly, has no need for concave and convex mirrors.

The instant inventors noticed that their micromechanical mirrors had curvature, at least some of which was generated during fabrication. Accordingly, in order to address this curvature, the instant inventors cleverly devised the claimed use of a concave mirror followed by a convex mirror with the same absolute radius of curvature to cancel any curvature effect. By fabricating one mirror with its optical surface facing down and the other mirror with its optical surface facing up (before assembly), the mirrors have opposite concavity after release. The divergence or convergence that the first mirror induces in the reflected optical wavefront is largely canceled after reflection from the second mirror. Since *Dickensheets* does not require compensation of any curvature effects, only the use of flat mirrors is disclosed. Therefore, *Dickensheets*, does not provide any suggestion or motivation to modify its flat mirror configuration. In light of the above, one skilled in the art would not have been motivated to modify the flat mirrors of *Dickensheets* with concave and convex mirrors.

In light of the above, it is respectfully submitted that independent claim 18 cannot be unpatentable over *Dickensheets*, as the prior art references do not teach or suggest all of the claim limitations, and the prior art references do not provide any suggestion of motivation to modify the reference.

⁴ See *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

⁵ See *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

New Claims

New claims 19-45 have been added to claim subject matter previously described, but not previously claimed. No new matter has been added.

Independent claims 19, 31, 44 and 45 all require a concave micromechanical mirror facing a convex micromechanical mirror. For at least the reasons stated above, none of the cited references disclose, teach or suggest such an arrangement. Accordingly, for this reason alone, new claims 19-45 are patentable over the cited references.

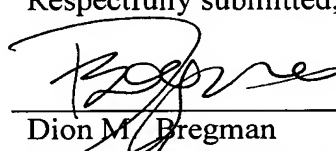
CONCLUSION

In view of the foregoing, it is respectfully submitted that the application is now in a condition for allowance. However, should the Examiner believe that the claims are not in condition for allowance, the Applicant requests that the Examiner call the undersigned attorney at 650-843-7519 to set up an interview.

If there are any fees or credits due in connection with the filing of this Amendment, including any fees required for an Extension of Time under 37 C.F.R. Section 1.136, authorization is given to charge any necessary fees to our Deposit Account No. 50-0310 (order No. 62262-0008-US). A copy of this sheet is enclosed for such purpose.

Respectfully submitted,

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